December 18, 2008

Dave Smith BNSF Railway Company 139 North Last Chance Gulch Helena, Montana 59601

RE: Request for Additional Indoor Air Investigation under Task I

Dear Dave:

The Montana Department of Environmental Quality (DEQ) and its contractor, Camp Dresser and McKee, Inc. (CDM), have reviewed the data provided by BNSF Railway Company (BNSF's) contractor, Kennedy/Jenks, regarding the 2008 Task I sampling events as well as the information related to the previous Task I sampling events. DEQ believes that the data provided further confirms that a subsurface source(s) of vapors exists at the Facility attributable to the volatile organic compounds (VOCs) in the soil and groundwater at the Facility. Therefore, DEQ requires further investigation and mitigation of the subsurface vapor intrusion of VOCs associated with VOC-contaminated soil and groundwater at the Facility.

Pursuant to § 75-10-711, Montana Code Annotated (MCA) and the April 17, 2006 letter from DEQ Director, Richard Opper, to Mark Stehly, DEQ is offering BNSF the opportunity to properly and expeditiously undertake the following actions related to Task I. As you know, DEQ has determined that BNSF is a potentially liable person under § 75-10-715(1), MCA, for the contamination at the Facility. Accordingly, if BNSF declines to, or fails to, properly and expeditiously perform the following activities, DEQ will undertake the activities itself and require BNSF to reimburse all of DEQ's remedial action costs in doing so. Please note that failure or refusal to complete the following remedial actions is evidence that BNSF is not properly or expeditiously performing said actions and may subject BNSF to penalties as provided for under CECRA or the 1990 Modified Partial Consent Decree or both.

Task I Status

In accordance with the Statement of Work for Spring 2005 Activities (Spring SOW - DEQ 2005) and Addendum No. 2 to the Final Task I Supplemental Investigation Work Plan for Indoor Air (Kennedy/Jenks Consultants, Inc. [Kennedy/Jenks] 2007), the BNSF Railway Company (BNSF) and its contractor, Kennedy/Jenks, collected indoor air samples from representative homes and businesses located within and near the Facility in December 2005 to evaluate whether volatile organic compounds (VOCs) occur in indoor air at concentrations above established indoor air screening levels. In April 2006, sub-slab soil gas and soil gas flux emissions samples were collected at locations where the December 2005 indoor air samples exceeded indoor air screening levels for site-specific chemicals of concern (COCs). The soil gas samples were

collected and analyzed in accordance with Addendum No. 1 to the Final Task I Supplemental Investigation Work Plan for Indoor Air (DEQ 2006). Site specific COCs for air include vinyl chloride (VC), trans-1,2-dichloroethene (trans-1,2-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), tetrachloroethene (PCE), and trichloroethene (TCE).

In April and June 2007 (Spring 2007), additional indoor air and sub-slab soil gas samples were collected to help identify buildings that may be at risk for vapor intrusion. Sampling locations were selected based on previous sample results, known and anticipated VOC sources, and susceptibility of the structures to potential vapor intrusion (DEQ, 2007). To further delineate the extent of VOCs in soil gas, 118 soil gas probes were installed in 38 separate boreholes at the Facility. The sampling methods described in Addendum No. 2 to the Final Task I Supplemental Investigation Work Plan for Indoor Air (DEQ, 2007) were used for the 2007 sampling events. The soil gas samples were analyzed for the full list of EPA Method TO-15 analytes. Sampling was performed by Kennedy/Jenks and its subcontractor H&P Mobile Geochemistry (H&P) from Solona Beach, California. Together the December 2005 indoor air sampling event and April 2006 soil gas sampling event are hereinafter referred to as the Task I Screening Investigation. The Spring 2007 soil gas sampling events are hereinafter referred to as the Task I Supplemental Investigation.

In February and March of 2008 (Spring 2008), indoor air and sub-slab soil gas samples were collected to further identify buildings that may be at risk for vapor intrusions and to re-evaluate some locations previously sampled. Sampling locations were selected based on indoor air and soil gas sample results and available access. In May of 2008, 16 additional soil-gas probes were installed and sampled. Indoor air and sub-slab soil gas sampling was performed by Kennedy/Jenks. H&P collected the soil gas samples. Based on the results from 2005-2007 sampling, the list of analytes for the Spring 2008 sampling event was reduced to:

- Vinyl Chloride (VC),
- *Cis*-1,2-dichloroethene (*Cis*-1,2-DCE),
- *Trans*-1,2-dichloroethene (*Trans*-1,2-DCE),
- Trichloroethene (TCE),
- Tetrachloroethene (PCE),
- Benzene.
- Ethylbenzene, and
- 1,1 Diflouraethane (tracer gas for sub-slab soil gas samples).

In addition to BNSF and DEQ sampling, Water & Environmental Technologies, LLC (WET) also collected indoor air samples on behalf of a citizens' group in Livingston. Samples were collected by WET during the May 2008 sampling event and also during Summer 2008.

2008 Supplemental Investigation

A supplemental indoor air and sub-slab soil gas investigation was conducted by Kennedy/Jenks at various business and residential locations in February, March, and May of 2008. The Spring 2008 sampling involved collection and analysis of 65 indoor ambient air samples, 44 sub-slab soil gas samples and 14 ambient air samples. Sub-slab soil gas samples were collected in 400

cubic centimeter (cc) summa canisters with a 100 cc/minute flow controller and indoor air and ambient air samples were collected in 6-liter (L) summa canisters over a 24-hour sampling period.

As part of the Spring 2008 Task I activities, an additional 16 soil-gas probes were installed and sampled. These additional soil gas probes were installed to supplement the soil gas probes that were installed in 2007. Soil-gas probes were installed using a direct push drill rig that pushed a 1½-inch diameter hollow rod into the ground. The additional soil-gas probes were completed and sampled at a depth of 5 feet below ground-surface. Tubing for sample collection was connected to a separate attachment that was connected to the top of the rod. Three volumes of air were purged from the rod and associated tubing prior to sampling. Soil gas samples were collected in 400 cc summa canisters with a 100 cc/minute flow controller. All soil-gas probes were removed after the samples were collected.

Split samples were collected as a quality control/quality assurance (QA/QC) measure by DEQ. Split samples were collected at the same time as the original sample and were physically connected to the "original" sample canister so that the sampled air was "split" to both sampling canisters. Split samples were collected by DEQ for all sample types (*i.e.*, soil gas, sub-slab, indoor air, and ambient air). Due to scheduling conflicts, two laboratories were used for analyzing the split samplings. Calscience Environmental Laboratories Inc., was used for analyzing samples collected in February and March. Columbia Analytical Services was used for analyzing the samples collected in May.

A total of four ambient air sampling locations were established. Previous ambient air samples collected from the original "background" location established on the hill north of the Facility (at the corner of 2nd Street and Gallatin St.) did not contain chlorinated solvents above screening levels. However, ambient air samples collected in February and March 2008 contained elevated concentrations of PCE, TCE, ethylbenzene, and benzene. DEQ required that three additional ambient air locations be identified and sampled during the May 2008 soil-gas probe sampling. The additional ambient air sampling locations were established farther to the northwest.

Results from 2008 Supplemental Investigation

Attachment 1 (2008 Results by property) presents the results from the Spring 2008 sampling event, including DEQ split samples. In general, the area southeast of the Facility (east of 'O' Street) and properties south of the Facility between Park and Callender Streets have structures with concentrations of PCE above screening levels in a majority of properties.

The ambient air samples collected during the Spring 2008 sampling event contained concentrations above the screening levels for PCE, benzene, and ethylbenzene. After the results from the ambient air samples collected in February and March were received and evaluated, three additional ambient locations were identified and sampled in May. The three additional ambient locations were meant to characterize background concentrations; however, PCE, benzene, and ethylbenzene were still measured above the site-specific screening levels for air. This is not consistent with the many indoor air concentrations that had lower concentrations. It appears that these ambient background samples do not truly represent concentrations that would be expected to be found indoors.

Attachment 2 presents the results for the May 2008 soil-gas sampling event. Step-outs probes were installed and sampled at SGP-1, SGP-12, SGP-13, SGP-31, and SGP-43 locations, and locations around the cinder pile. Four step-outs were placed approximately 100 feet in the north, east, west, and south directions, respectively, for the SGPs listed above except for SGP 1, SGP-12 and SGP-43. One step-out was installed at SGP-1 to the west to further define the western extent. Due to access issues, step-outs were placed only in the east and south directions for SGP-12. Step-outs for SGP-43 were placed only to the south. Concentrations are generally lower in the step-outs relative to the soil gas probe samples collected in 2007. However, PCE concentrations in 13 of the step-outs were above the soil gas screening level and there is still a strong indication of a widespread subsurface soil-gas VOC plume. This is especially true in the Rainbow Motel area (around SGP-31).

Conclusions from the Task I Supplemental Investigation

Based on the sub-slab soil gas and indoor air data collected and evaluated to date, DEQ believes that there is a correlation between sub-surface soil gas contamination and indoor ambient air at several of the locations sampled and, therefore, mitigation is required at the following locations:

- 23B 326 N. L Street
- 39 1221 E. Gallatin Street
- 68 111 Miles Lane
- 75A 1404 E. Park Street*
- 75B 1500 E. Park Street*
- 76A 1500 E. Callender Street*
- 76B 1495 E. Callender Street*
- 80 (SE-29) 5574 US Hwy 89*
- 83 2 Harris Place*
- 91 1305 E. Park Street*

- 99 1403 E. Callender Street
- 109 104 N. M Street
- 113 103 N. M Street*
- 127 109 N. L Street
- 161 120 N. H Street
- 166 102 N. H Street
- NE-16 1104 E. Gallatin Street*
- SE-3 119 N. I Street

Notification of sampling results has been sent to the owners of the properties with asterisks prior to the date of this letter. The mitigation system in place at location SE-5 - 110 N. O Street should continue to operate and the location should be added to the operation and maintenance plan for properties requiring mitigation.

DEQ believes that sampling results indicate a possible correlation between sub-surface soil gas contamination and indoor ambient air and, therefore, re-sampling is required at the following locations:

- 47 1365 E. Gallatin Street #27
- 78M 330 Bennett Street (shop/office)*
- 84 5576 US Hwy 89
- 93 1415 E. Callender
- 133 112 N. K Street
- 167 805 Callender Street

- 541 101 S. M Street*
- 542B 105 S. M Street*
- 549A 1119 E. Lewis Street*
- U 903 E. Gallatin Street
- NE-7 1003 E. Gallatin Street
- NE-17 1123 E. Gallatin Street

- SE-1 108 N. L Street
- SE-8 1 Harris Place*

- SE-9 117 S. N Street
- SE-14 116 N. L Street

Notification of sampling results has been sent to the owners of the properties with asterisks prior to the date of this letter. The iron shop will be added to the TALGO shop mitigation plans currently being reviewed by DEQ.

DEQ has determined that sampling results indicate that no further action is required at the following locations at this time:

- 23 322 N. L Street
- 28 328 N. M Street
- 43 1311 E. Gallatin Street*
- 68B 413 Bennett Street
- 69 411 Bennett Street
- 78 330 Bennett Street (WWTP)
- 80-2 5574 US Hwy 89 #2
- 80-4 5574 US Hwy 89 #4
- 80-8 5574 US Hwy 89 #8
- 92 1122 E. Park Street
- 108 1222 E. Park Street
- 125 1104 E. Park Street*
- 129 117 N. L Street
- 132 108 N. K Street*
- 142 121 N. K Street*
- 154 109 N. I Street

- 157 830 E. Park Street
- 158 814 E. Park Street
- 168 809 Callender Street*
- 514 1511 E. Lewis Street*
- 542A 103 S. M Street*
- 549B 1121 E. Lewis Street*
- 709 1306 E. Gallatin Street
- 725 1308 E. Gallatin Street
- RC 704 E. Gallatin Street
- E 809 E. Gallatin Street*
- NE-3 920 E. Gallatin Street
- NE-14 403 N. L Street
- SE-2 823 E. Callender Street
- SE-10 124 N. H Street
- SE-11 116 N. H Street
- SE-20 1401 E. Callender Street

Notification of sampling results has been sent to the owners of the properties with asterisks prior to the date of this letter.

The soil gas sampling results (SGP locations) further define the extent of the vapor plume in some locations. This is particularly evident in the area southeast of the rail yard (SGP-43 to SGP-31). The results show that a VOC-vapor plume is present from 'N' Street eastward to the Rainbow Motel area. PCE concentrations around the cinder pile are also elevated (55 μ g/m³ to 820 μ g/m³), suggesting the presence of a VOC-vapor plume under the cinder pile. However, the magnitude of concentrations detected near the Cinder Pile is not the same level as seen in nearby SGP-11 (13,000 μ g/m³).

Ambient background concentrations for the 2008 sampling event were not used or considered for the current Task I forward planning effort. Regardless of ambient background concentrations, many indoor air samples are still above established screening levels. In addition, some indoor air

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samples have concentrations below the ambient concentrations which indicate that an unknown source may exist at the ambient air sampling locations.

Additional indoor air and sub-slab samples shall be collected from habitable structures within the areas shaded in green on Figures 1 and 2 and described approximately below:

- North of Gallatin Street first row of houses between 'I' street and sample location 47
- North of Park Street Between 'G' and 'O' Street to the main line
- South of Park Street Between 'G' and 'H' Street
- South of Callender Street Between 'G' and 'K' street
- South of Park Street Between 'I' and ½ block east of 'K' street
- ½ block south and north of Callender Street Between ½ block west of 'M' Street and 'O' street
- East of 'O' street –Area between Park and Callender street south to sample area 83 (Harris place)

Indoor air and sub-slab samples shall also be collected from the specific locations listed below:

- 5574 Hwy 89 No. 10
- 111 S. L Street
- 113 S. L. Street
- 110 N. N Street
- The home at the northeast corner of Gallatin and N Streets
- 120 S. N Street
- 104 and 104 ½ North K Street
- 219 Garnier #21
- 117 S. N Street (property has previously been sampled by WET, please determine whether owner would still like to have BNSF sample with DEQ oversight).

Sampling will follow procedures outlined in *Addendum No. 2 of the Final Task I Supplemental Work Plan for the Investigation of Indoor Air*. Any new changes in procedure should be addressed in a new addendum and submitted to DEQ in a timely manner. Prior to sampling, specifically for stepping-out, a field survey will be conducted jointly by Kennedy/Jenks and DEQ to select specific indoor air sampling locations within the general areas identified in this document.

Mitigation Plans

One generic mitigation plan shall be developed that describes different mitigation options or alternatives that will be applicable at all residential and commercial properties (both future and current). The plan shall include post-mitigation sampling plans and also include provisions for maintaining the operation of the systems. A walk-through will be conducted at each property, prior to mitigation, to determine the most suitable layout and options for mitigation. After all

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properties requiring mitigation have been surveyed and site-specific mitigation options have been selected, BNSF will prepare and submit to DEQ a copy of a bid package that presents the site-specific design for each property.

Objectives for Additional Task I Data Collection

In accordance with direction provided by DEQ, the objectives for additional Task I data collection are as follows:

- Characterize the VOC contamination, including the site specific COCs, laterally and vertically through soil gas and/or sub-slab sampling.
- Identify and collect additional indoor and outdoor ambient air samples to define the lateral extent of the contamination.
- Identify buildings where no unacceptable risks are evident.
- Identify buildings that must be considered for mitigation to address indoor air impacts.

Sampling Rationale

BNSF has previously conducted soil gas (sub-slab and flux chamber) and indoor air sampling at the Facility. The areas targeted for additional sampling overlie areas of VOC impacted and potentially impacted groundwater and soil and where previous data collected warrant further investigation to characterize the lateral and vertical extent of the subsurface contamination.

Additional Indoor Air and Sub-Slab Soil Gas Sampling

The objective of this sampling is to identify buildings with unacceptable risks to inhabitants from VOCs in indoor air due to vapor intrusion. Ambient air samples should be collected only as outdoor ambient air samples at appropriate locations. Weather data should be collected to determine any barometric pressure changes and predominant wind direction during the sampling event. Sub-slab and ambient air samples collected should be analyzed using EPA Method TO-15 with appropriate RLs and MDLs at or below the DEQ approved screening levels for the Facility.

For the purposes of this sampling event, general locations for additional sampling were selected in the areas overlying VOC impacted and potentially impacted groundwater and soil, and at locations identified as potential high risk areas based on previous sampling events conducted from December 2005 through May 2008. The owner/occupant should be notified prior to the sampling day by a telephone call, and an instruction page and survey must be provided. The owner/occupant will also be required to sign an access agreement, allowing the field personnel to enter the building and to sample the indoor air.

Health and Safety

The current Facility-Wide and Event Specific Health and Safety Plans should be modified as appropriate to address the sampling activities specified in the Task I Supplemental Investigation Work Plan and Addenda and approved prior to commencing work at the Facility.

Deliverables

BNSF must submit to DEQ a letter response indicating how it intends to meet these requirements within 10 days of its receipt of this letter. This letter must include any proposed changes to the approved sampling procedures. DEQ requires that indoor air and sub-slab sampling be completed before March 1, 2009. DEQ also requires that BNSF submit to DEQ the mitigation plan specified above within 30 days of its receipt of this letter. Pursuant to DEQ Director, Richard Opper's, April 17, 2006 letter, DEQ will review the draft plans and provide its comments to BNSF to the maximum extent practicable in redline/strikeout electronic form. Pursuant to the SOW and the April 17, 2006 letter, BNSF will be afforded one opportunity to finalize the plans by incorporating DEQ's comments/requirements. Within 60 days of completion of the required sampling, DEQ will require a comprehensive report of all Task I investigation activities conducted since January 2007.

If you have any questions, please feel free to contact me at 406-841-5065 or via email at areynolds@mt.gov.

Sincerely,

Original signed 12/18/08

Aimee T. Reynolds Project Manager

cc: John Norris, Kennedy/Jenks Katherine Haque-Hausrath, DEQ Legal Mark Hills, CDM – Helena, MT Mark Johnson, RTI

Attachment 1
TASK I 2008 Indoor Air and Soil Gas Sampling
Burlington Northern Livingston Shop Complex
Livingston, MT
Spring 2008

					TO ARREST THE SAME	T1 35 85		latile Organi	Compounds (VOCs) (µg/m³)		CALL COLOR
					1,1-Diffuoroethane (LCC) ^(a)	vinyl chloride	cis-1,2- dichloroethene	benzene	trichloroethene	tetrachloroethene	ethylbenzene	trans-1,2- dichloroethen
15,413	Target	Indoor Air Screening Level (ıg/m³) ^(b)		NA NA	0.48	35	0.31	0.11	0,81	2.2	70
	Target Soil Gas Scree	ening Level (µg/m³) with atter	nuation factor = 0.02 (c)		NA NA	24	1750	15.5	5,5	40.5	110	3500
ocation ID	Address and notes	Sample ID ^{(d)(e)(f)}	Location Type	Date	图 2012 A			18 T. Jah	A TROP IN LIGHT		The second	
	322 N, L Street	08-AS-23	Mobile home	2/26/2008	NA ⁽⁰⁾	<0.035 ^(h)	<0.11	0.57	0.034U	0.14J ⁽ⁱ⁾	0.17	<0.55
13	322 N. L Street	08-SG-23	Skirting	2/26/2008	<10	NA	<10	<25	6.5	23	<25	<10
23B	326 N. L Street	08-AS-23BL	Mobile home	2/29/2008	NA	<0.050	<0.15	6.6	0.086	1.9	1.5	<0.77
30	320 N. L Street	08-SG-23B	Soil gas in basement	2/29/2008	<10	NA	<10	<25	- 30	3900	<25	<10
28	328 N. M Street	08-AS-28	Transfer station office	2/28/2008	NA NA	<0.033	<0.10	0.58	0,028	0.24	0.37	0.019J
		08-AS-39L	House upstairs	2/27/2008	NA	0.049	<0.10	2.5	0.042U	0.18	0.087J	0.021UJ
19	1221 E. Gallatin Street	08-AS-39B	House basement	2/27/2008	NA	0.064	<0.14	0.36	0.04U	1.6	0.15J	<0.73
		08-SG-39	Subslab	2/27/2008	<10	NA	<10	<25	<5.0	30	<25	<10
67	1365 E. Gallatin Street #27	08-AS-47L	Mobile home	2/25/2008	NA	<0.038	<0.12	1.2	0.11	0.18J	0.93	<0.59
1	1305 E. Gallaun Street #27	08-SG-47	Skirting	2/25/2008	<10	NA	<10	<25	20	52	53	<10
		08-AS-68L	House upstairs	3/5/2008	NA	<0.040	<0.12	2.8J	0.089J	1.6J	2.6J	<0.63
	111 Miles Lane	D1-AS-03-05-08	Dup	3/5/2008	NA	<0.041	<0.13	2.2J	0.06J	1,1	1.8J	<0.64
8		08-AS-68B	House basement	3/5/2008	NA	<0.038	<0.12	0.66	0.066	5,3	0.066J	<0.59
		08-SG-68	Soil gas in basement	3/5/2008	<10	NA	<10	25	<5.0	450	<25	<10
		D1-SG-03-05-08	Dup	3/5/2008	<10	NA	<10	<25	<5.0	470	<25	<10
	413 Bennett Street	08-AS-68BL	Schwartz Woodworking	3/4/2008	NA	<0.033	<0.10	5,6	0.056	0.18	10	<0.52
58B		08-AS-68BB	Schwartz basement	3/4/2008	NA	<0.033	<0.10	1.6	0.035	0.091J	0.47	<0.52
	A Company of the Comp	08-SG-68B	Subslab	3/4/2008	<10	NA	<10	<25	<5.0	<5.0	<25 <25 10 0.47 <25 2.7	<10
59	411 Bennett Street	08-AS-69M	Bresnan office	2/25/2008	NA	<0.037	<0.11	8.0	0.085	0.76	2.7	0.064UJ
750	4404 E. Barlo Street	08-AS-75A	Coffee shop	2/25/2008	NA	<0.039	<0.12	1.6	0.11	5.6	23	<0.60
75A	1404 E. Park Street	08-SG-75A	Subslab	2/25/2008	<10	NA	<10	<25	<5.0	58	<25	<10
	ACON E. D. J. Ov. A	08-AS-75BM	Antique store	2/25/2008	NA .	<0.037	<0.11	0.63	0.11	3.4	0.71	<0.57
75B	1500 E. Park Street	08-SG-75B	Subslab	2/25/2008	<10	NA	<10	<25	23	520	<25	<10
	4500 5 0 11 - 4 00 - 4	08-AS-76AB	Main house	2/25/2008	NA	<0.032	<0.10	0.14J	0.18	6.1	0.035UJ	<0.50
76A	1500 E. Callender Street	08-SG-76A	Subslab	2/25/2008	<10	NA	<10	<25	39	180	160	<10
		08-AS-76BL	Rental house	2/25/2008	NA .	<0.032	<0.10	0.39J	0.027U	0.4J	0.54J	<0.50
76B	1495 E. Callender Street	D1-AS-02-25-08	Dup	2/25/2008	NA	<0.037	<0.11	0.64J	0.044U	3.J	4.6J	<0.57
		08-SG-76B	Subslab	2/25/2008	<10	NA	<10	<25	<5.0	49	<25	<10
		08-AS-78L	WWTP office	3/3/2008	NA	<0.042	<0.13	2.4J	0.083J	1J	2.4J	<0.66
78	330 Bennett Street - WWTP	08-AS-78L-1S	DEQ split	3/3/2008	NA	<.10	<0.16	0.71	<0.22	<0.27	0.24	<0.16
		08-AS-78B	WWTP basement	3/3/2008	NA	<0.043	<0.13	0.56	0.027J	0.42	0.11J	<0.67
		08-AS-78M-1	City/County shop	3/3/2008	NA	<0.041	<0.13	89	16	1.1	42	<0.64
78M	330 Bennett Street	08-AS-78M-2	City/County office	3/3/2008	NA	<0.034	<0.10	4.8	0.16	0.30	2.5	<0.53
	1	08-SG-78M	Subslab	3/3/2008	<10	NA.	<10	<25	<5.0	26	<25	<10

Attachment 1
TASK I 2008 Indoor Air and Soil Gas Sampling
Burlington Northern Livingston Shop Complex
Livingston, MTT
Spring 2008

Fire Example in				E CARRE	State Market			olatile Organic	Compounds (VOCs) (µg/m³)	BALL FAST	Marine .
					1,1-Diffuoroethane (LCC) ^(e)	vinyl chloride	cis-1,2- dichloroethene	benzene	trichloroethene	tetrachloroethene	ethylbenzene	trans-1,2- dichloroether
	Target Ind	oor Air Screening Level (ug/m³) ^(b)		NA .	0.48	35	0.31	0.11	0.81	2.2	70
	Target Soil Gas Screenin	g Level (µg/m²) with atter	nuation factor = 0.02 (c)		NA NA	24	1750	15,5	5,5	40.5	110	3500
ocation ID	Address and notes	Sample ID (d)(e)(f)	Location Type	Date		1.02	Take the set	Sh-Ast	de desde			- 25
		08-AS-80	Rainbow motel office/home	3/5/2008	NA	<0.035	<0.11	1.2	0.53	6.4	0.87	0.019J
80 (SE-29)	5574 US Hwy 89	08-SG-80	below wood bedroom floor (space)	3/5/2008	<10	NA	<10	<25	5	21	<25	<10
10-2	5574 US Hwy 89 #2	08-AS-80-2	Mobile home	2/27/2008	NA	<0.039	<0.12	1.2	0.018UJ	0.079J	1.5	<0.60
.0-2	3574 GS 11My GS 172	08-SG-80-2	Skirting	2/27/2008	<10	NA	<10	<25	<5.0	71	<25	<10
10-4	5574 US Hwy 89 f/4	08-AS-80-4	Mobile home	3/5/2008	NA	<0.040	<0.12	2.4	0,059	0.29	0,49	0.056J
,0-4	3574 05 TWy 05 II4	08-SG-80-4	Skirting	3/5/2008	<10	NA	<10	<25	<5.0	25	<25	<10
30-8	5574 US Hwy 89 #8 (under skirting)	08-AS-80-8	Mobile home	3/5/2008	NA NA	<0.047	<0.14	6.7	0.051U	0.14J	8.7	<0.73
10-0	3574 OS Hwy 65 to (under statung)	08-SG-80-8	Skirting	3/5/2008	<10	NA	<10	. <25	<5.0	<5.0	<25	<10
3	2 Harris Place	08-AS-83L	House w/narrow craw/space	2/26/2008	NA.	<0.034	<0.10	0.57	0.036U	3.6	4.6	<0.52
	2 ridiris Piace	08-AS-83LDEQ	DEQ split	2/26/2008	NA.	<0.26	<0.40	1.5	<0.54	7.0	2.2 110 0.87 <25 1.5 <25 0.49 <25 8.7 <25	<0.40
4	5576 US Hwy 89	08-AS-84M	KPRK office	2/27/2008	NA NA	<0.038	<0.12	0.29	0.020UJ	0.20	0.11J	<0.59
*	3570 CS Hwy 65	08-SG-84	Subslab	2/27/2008	<10	NA	<10	<25	14	83	1.5	<10
		08-AS-91M-1	Guy's Glass shop	2/25/2008	NA	<0.035	<0.11	3.6	0.28	6.7	2,6	<0.55
1	1305 E. Park Street	08-AS-91M-2	Guy's Glass office	2/25/2008	NA	<0.035	<0.11	0.76	0,024U	0.26	0,21	<0.55
		08-SG-91	Subslab	2/25/2008	<10	NA	<10	<25	89	5200	<25	<10
2	1122 E. Park Street	08-AS-92-1	John Deer manager office	2/26/2008		<0.042	<0.13	13	0.20	0.25	60 2.6 0.21 <25 7.5 7.4 <0.12 <25 4.4J	0.16J
4	1122 E. Park Sueet	08-AS-92-2	John Deer back office	2/26/2008		<0.040	<0.12	12	0.24	0.38		0.22J
3	1415 E. Callender Street	08-AS-93	House	2/28/2008	NA	<0.037	<0.11	3,4	<0.023	<0.20	<0.12	<0.57
•	1413 E. Callerider Street	08-SG-93	Soil gas in crawlspace	2/28/2008	<10	NA	<10	<25	<5.0	74	<25	<10
		08-AS-99	House main floor	3/5/2008	NA	0.018J	<0.11	3.2J	0.15J	4.1J	4.4J	<0.56
19	1403 E. Callender Street	08-AS-99S	DEQ split	3/5/2008	NA.	<0.14	0.37	5.1	0.36	9.1	5.9	<0.21
15	1403 E. Canender Street	08-SG-99	Soil gas in crawlspace	3/5/2008	<10	NA	<10	<25	<5.0	5.0	<25	<10
		08-SG-99-S	DEQ split	3/5/2008	NA	<2.5	<3.9	<3.2	720	- 11	<4.3	<3.9
08	1222 E. Park Street	08-AS-108M	Tirerama office	2/25/2008	NA	<0.037	<0.11	7.3	17	0.51	4.4	<0.57
		08-AS-109L	House upstairs	2/26/2008	NA NA	<0.037	<0.11	0.41	0.084	0.040J	0.33	<0.57
09	104 N. M Street	08-AS-109B	House basement	2/26/2008	NA.	<0.044	<0.14	0.64	0.037U	1.9	2,9	<0.69
03	104 N. W Sueet	D1-AS-02-26-08	Dup	2/26/2008	NA	<0.038	<0.12	0.54	0.024U	1,4	2.3	<0.59
		08-SG-109	Subslab	2/26/2008	<10	NA	<10	<25	18	52	<25	<10
13	103 N. M Street	08-AS-113	House	2/29/2008	NA	<0.042	<0.13	0.61	0.034U	1.5	1.1	<0.66
	Too is, in oddet	08-SG-113	Soil gas in basement	2/29/2008	<10	NA	<10	<25	<5.0	50	<25	<10
		08-AS-125M	Vet's office	2/26/2008	NA	<0.039	0.017UJ	0.57	0.018UJ	0.096J	0,39	<0.60
25	1104 E. Park Street	08-SG-125	Subslab	2/26/2008	<10	NA	<10	<25	<5.0	14	<25	<10
		08-SG-125DEQ	DEQ split	2/26/2008	<5.4	NA	<2.0	2,9	<3.4	<2.7	8.7 <25 4.6 9.3 0.11J 60 2.6 0.21 <25 7.5 7.4 <0.12 <25 4.4J 5.9 <25 <4.3 4.4 0.33 2.9 2.3 <25 1.1 <25 0.39 <25 <2.2 0.46	<2.0
27	109 N. L Street	08-AS-127	main floor	3/3/2008	NA NA	0.018J	<0.12	1.9	0.035	2.8	0.46	<0.61
21	105 N. L Street	08-SG-127	Soil gas in basement	3/3/2008	NA NA	NA	<10	<25	<5.0	46		<10

			AR STREET BY SECTION		and the A. Child			olatile Organi	Compounds (VOCs) (µg/m³)		
					1,1-Difluoroethane (LCC) ^(a)	vinyl chloride	cis-1,2- dichloroethene	benzene	trichloroethene	tetrachloroethene	ethylbenzene	trans-1,2- dichloroethen
	Тал	get Indoor Air Screening Level (ug/m³) ^(b)		NA NA	0.48	35	0.31	0.11	0.81	2.2	70
	Target Soil Gas S	creening Level (µg/m²) with atter	nuation factor = 0.02 (c)	WE 170 DE S	NA NA	24	1750	15.5	5,5	40.5	110	3500
ocation ID	Address and notes	Sample ID ⁽⁴⁾⁽⁴⁾⁽⁷⁾	Location Type	Date		a = 14.691		211-4	1 2 2 Ch		E 23 TEST	
		08-AS-129	House	2/27/2008	NA NA	<0.041	<0.13	0.53	0.03U	0.14J	0.35	<0.64
29	117 N. L Street	08-SG-129	Soil gas in basement	2/27/2008	<10	NA	<10	<25	10	<5.0	<25	<10
		D1-SG-02-27-08	Dup	2/27/2008	<10	NA	<10	<25	<5.0	30	<25	<10
		08-AS-133L	House upstairs	2/26/2008	NA	<0.040	<0.12	1.1	0.026	0.15J	0.26	<0.61
33	112 N. K Street	08-AS-133B	House basement	2/26/2008	NA	<0.035	<0.11	0.64	0.020J	0.20	0.14	<0.54
33	112 N. K Street	08-SG-133	Subslab	2/26/2008	<10	NA	<10	<25	<5.0	50	<25	<10
		D1-SG-02-26-08	Dup	2/26/2008	<10	NA	<10	<25	<5.0	30	<25	<10
		08-AS-154L	House upstairs	2/29/2008	NA NA	<0.039	<0.12	0.48	0.026U	0.088J	0.21	0.033UJ
54	109 N. I Street	08-AS-154B	House basement	2/29/2008	NA NA	<0.041	<0.13	1.7	<0.026	0.20J	0.91	<0.64
54	103 N. I Suect	08-SG-154	Subslab	2/28/2008	<10	NA .	<10	<25	5.6	21	<25	<10
		08-SG-154DEQ	DEQ split	2/28/2008	<5.4	NA	<2.0	1.6	<2.7	<3.4	<2.2	<2.0
		08-AS-157L	House upstairs	2/29/2008	NA NA	<0.067	<0.21	0.51	0.029UJ	0.040J	0.11J	<1.0
		08-AS-157B	House basement	2/29/2008	NA	<0.037	<0.11	1.2J	0.043U	0.45J	1.2J	<0.57
57	830 E. Park Street	D1-AS-02-29-08	Dup .	2/29/2008	NA	<0.035	<0.11	1.13	0.041U	0.43J	1.1J	<0.54
31		08-SG-157	Subslab	2/29/2008	<10	NA	<10	<25	<5.0	<5.0	<25	<10
		D1-SG-02-29-08	Dup	2/29/2008	<10	NA	<10	<25	<5.0	5.0	<25	<10
		08-SG-157DEQ	DEQ split	2/29/2008	78	NA	<2.0	2.9	<2.7	<3.4	3.7	<2.0
	814 E. Park Street	08-AS-158L	Country Motor Inn office	2/29/2008	NA	<0.039	<0.12	1,4	0.028U	0.036UJ	0.35	<0.60
58		08-AS-158B	Country Motor Inn basement	2/29/2008	NA	<0.039	<0.12	0.77	0.021UJ	0.054J	0.22	<0.60
		08-SG-158	Subslab	2/29/2008	<10	NA	<10	<25	8,9	47	37	<10
		08-AS-161L	House upstairs	2/28/2008	NA	<0.038	<0.12	1.8	0.076	0.53	5.0	<0.59
61	120 N. H Street	08-AS-161B	House basement	2/28/2008	NA	<0.035	<0.11	0.91	0.054	1.4	2.8	<0.54
		08-SG-161	Subslab	2/28/2008	<10	NA	<10	<25	<5.0	64	<25	<10
66	102 N. H Street	08-AS-166	House	2/27/2008	NA	<0.039	<0.12	0.65	0.038U	0.84	0.60	<0.60
•••	Toz it. if offeet	08-SG-166	Soil gas in basement	2/27/2008	<10	NA	<10	<25	<5.0	140	<25	<10
		08-AS-514	House	2/28/2008	NA	<0.037	<0,11	0.65	0.012J	0,047J	0.17	<0.57
14	1511 E. Lewis Street	08-SG-514	Soil gas in crawlspace	2/28/2008	<10	NA	<10	<25	<5.0	23	<25	<10
		08-SG-514	DEQ split	2/28/2008	<5.4	NA	<2.0	2.7	<2.7	<3.4	3.1	<2.0
		08-AS-541L	Mobile home	2/28/2008	NA NA	<0.041	<0.13	1.5	0.062	0.81	2.4	<0.64
41	101 S. M Street	08-AS-541LDEQ	DEQ split	2/28/2008	NA .	<0.064	<0.099	1.7	<0.13	1.1	3.7	<0.099
		08-SG-541	Skirting	2/28/2008	<10	NA	<10	<25	<5.0	5.6	<25	<10
42A	103 S. M Street	08-AS-542A	House	2/28/2008	NA	<0.037	<0.11	0.72	<0.023	0.068J	0.17	<0.57
		08-SG-542A	Soil gas in crawlspace	2/28/2008	<10	NA	<10	<25	<5.0	18	<25	<10
42B	105 S. M Street	08-AS-542B	Mobile home	2/28/2008	NA	<0.040	<0.12	0.77	0.22	0.21	0.28	<0.61
		08-SG-542B	Skirting	2/28/2008	<10	NA	<10	<25	7.1	9.9	<25	<10

Attachment 1 TASK I 2008 Indoor Air and Soil Gas Sampling Burlington Northern Livingston Shop Complex Livingston, MT Spring 2008

Distance S				W. 1	Showing to be			olatile Organic	Compounds (VOCs) (µg/m²)		10192 To 101
				WE SELECT	1,1-Diffuoroethane (LCC) ^(a)	vinyl chloride	cis-1,2- dichloroethene	benzene	trichloroethene	tetrachloroethene	ethylbenzene	trans-1,2- dichloroethen
3.3	Targ	et Indoor Air Screening Level (ug/m³) ^(b)		NA NA	0.48	35	0.31	0.11	0.81	2.2	70
1454	Target Soil Gas Sc	reening Level (µg/m³) with atter	nuation factor = 0.02 (c)		. NA	24	1750	15,5	5,5	40.5	110	3500
ocation ID	Address and notes	Sample ID ^{(d)(e)(f)}	Location Type	Date		257	Z Brief Friedly		STABLE SELECTION			
		08-AS-549A	House	2/28/2008	NA	0.025J	0.16	1.2	0.26	0.96	2.2	0.17J
49A	1119 E. Lewis Street	D1-AS-02-28-08	Dup	2/28/2008	NA	<0.039	<0.12	1.3	0.098	1.0	2.1	0.063J
		08-SG-549A	Crawlspace air ("skirting")	2/28/2008	<10	NA	<10	<25	<5.0	<5.0	2.2	<10
549B	1121 E. Lewis Street	08-AS-549B	Mobile home	2/28/2008	NA	<0.039	<0.12	0.86	0,033	0,056J	2.2 110 2.2 2.1 <25 0.26 <25 0.62 29 1.3 6.6 <25 <4.5 0.11J 0.17 <25 <25 <4.3 0.68 0.94 0.83 <25 0.51 0.42 56 1J 2.8 1.5 2.2 <25 0.48 <25 0.48 <25 0.48 <25 0.48	<0.60
7400	1121 E. Lewis Sudet	08-SG-549B	Skirting	2/28/2008	<10	NA	<10	<25	<5.0	<5.0	<25	<10
1306	709 E. Gallatin Street	08-AS-1306L	House	2/26/2008	NA	<0.040	<0.12	1.6	0.039	0.14J	0.62	<0.63
1000	705 E. Galladii Gueet	08-SG-1306	Soil gas in crawlspace	2/26/2008	<10	NA	<10	<25	17	40	29	<10
		08-AS-1308L	House upstairs	3/3/2008	NA NA	0.012J	<0.12	1.2	0.076	0.065J	1.3	<0.63
1308	725 E. Gallatin Street	08-AS-1308B	House basement	3/3/2008	NA	0.059	<0.10	1.7	0.37	0,13J	6.6	<0.51
1300	725 E. Gallatin Street	08-SG-1308	Soil gas in basement	3/3/2008	<10	NA	<10	<25	<5.0	7.2	<25	<10
		08-SG-1308S	DEQ split	3/3/2008	NA	<2.6	<4.1	4.6	<5.6	<7.0	<25 0.26 <25 0.62 29 1.3 6.6 <25 <4.5 0.11J 0.17 <25 <25 <4.3 0.65 0.94 0.83 <25 <25 <1.3 0.65 0.94 0.83 <25 <25 56	<4.1
RC	704 E. Gallatin Street	08-AS-RC	Rec Center	3/5/2008	NA NA	<0.036	0.029J	0.95	0.089	0.076J	0.11J	<0.56
		08-AS-IS	Iron Shop	3/5/2008	NA.	<0.043	<0.13	0.78	0.074	0.084J	0,17	<0.67
	704 5. 0-11-11-01-14	08-SG-IS-1	Subslab	3/5/2008	<10	NA	<10	<25	2700	12	<25	<10
IS	704 E. Gallatin Street	08-SG-IS-2	Subslab	3/5/2008	<10	NA	<10	<25	880	8.4	<25	<10
	. Conservation of the contract	08-SG-IS-2S	DEQ split	3/5/2008	NA	<2.5	<3.9	<3.1	<5.3	7.2	<25 <4.5 0.11J 0.17 <25 <25 <4.3 0.65 0.94 0.83 <25	<3.9
E	809 E. Gallatin Street	08-AS-EL	House w/narrow crawlspace	2/25/2008	NA	<0.040	<0.12	0.96	0.12	0.18J	0.65	<0.63
	903 E. Gallatin Street	08-AS-UL	House upstairs	3/4/2008	NA	<0.040	<0.12	2,6	0.23	8,6	0.94	6,2
		08-AS-UB	House basement	3/4/2008	NA.	<0.060	<0.18	1.8	0.42	1.6	0.83	1,8
U		08-SG-U	Soil gas in basement	3/4/2008	<10	NA	<10	<25	<5.0	6.5		<10
		D1-SG-03-04-08	Dup	3/4/2008	<10	NA	<10	<25	25	12	<25	<10
		08-AS-NE-3L	House upstairs	2/25/2008	NA NA	0.016J	<0.12	0.80	0.045	0.57	0,51	<0.59
NE-3	920 E. Gallatin Street	08-AS-NE-3B	House basement	2/25/2008	NA NA	0,018J	<0.12	0.79	0,03U	0.43	0,42	<0.59
		08-SG-NE-3	Subslab	2/25/2008	<10	NA	<10	<25	20	66		<10
		08-AS-NE-7L	House upstairs	3/4/2008	NA NA	<0.033	<0.10	1,4,1	0.045J	0.38J	1,1	<0.52
		08-AS-NE-7L-S	DEQ split	3/4/2008	NA NA	<0.11	0.38	1,6	<0.24	2.4	The second second	<0.18
NE-7	1003 E. Gallatin Street	08-AS-NE-7B	House basement	3/4/2008	NA NA	<0.043	<0.13	1,8	0.066	0.62		<0.67
		08-AS-NE-7B-S	DEQ split	3/4/2008	NA.	<0.11	<0.17	1,4	<0.24	0.77	244	<0.17
		08-SG-NE-7	Subslab	3/4/2008	<10	NA	<10	<25	<5.0	<5.0	2.2 2.1 <25 0.26 <25 0.62 29 1.3 6.6 <25 <4.5 0.11J 0.17 <25 <25 <4.3 0.65 0.94 0.83 <25 <25 0.51 0.42 56 1J 2.8 1.5 2.2 <25 0.48 <25 8.0 7.3	<10
ALTERNATION OF THE PERSON OF T	THE CONTRACTOR OF	08-AS-NE-14	Mobile home	3/4/2008	NA	<0.040	<0.12	1.7	0.022J	0.34		<0.61
NE-14	403 N. L Street	08-SG-NE-14	Skirting	3/4/2008	<10	NA.	<10	<25	<5.0	<5.0		<10
		08-AS-NE-16L	House upstairs	2/26/2008	NA NA	<0.040	<0.12	10	0.085	2.2		<0.63
NE-16	1104 E. Gallatin Street	08-AS-NE-16B	House basement	2/26/2008	NA NA	<0.035	<0.11	10	0.020UJ	1.8		<0.55
		08-SG-NE-16	Subslab	2/26/2008	NA NA	NA.	<10	<25	<5.0	7,5	_	<10

					CEIDER LOSSE			olatile Organic	Compounds (VOCs) (µg/m³)	DIM alternative	
					1,1-Diffuoroethane (LCC) ^(a)	vinyl chloride	cis-1,2- dichloroethene	benzene	trichloroethene	tetrachloroethene	ethylbenzene	trans-1,2- dichloroethene
1272	Targ	et Indoor Air Screening Level (µ	g/m³) ^(b)		NA NA	0.48	35	0,31	0.11	0.81	2.2	70
	Target Soil Gas Sc	reening Level (µg/m³) with atten	uation factor = 0.02 (c)		NA	24	1750	15,5	5.5	40.5	110	3500
ocation ID	Address and notes	Sample ID ^{(d)(e)(f)}	Location Type	Date		31 2/53		Winds			rt da kresse	
		08-AS-NE-17L	House upstairs	3/3/2008	NA NA	0.013J	<0.12	1.7J	0.11J	0.99J	2,1	<0.63
		D1-AS-03-03-08	Dup	3/3/2008	NA NA	0.012J	<0.12	1.5	0.10	0.82	1.7	<0.61
NE-17	1123 E. Gallatin Street	08-AS-NE-17B	House downstairs	3/3/2008	NA	0.014J	<0.13	0.85	0.068	0,34	0.70	<0.67
		08-SG-NE-17	subslab in basement	3/3/2008	<10	NA	<10	<25	<5.0	5.1	<25	<10
		08-SG-NE-17-S	DEQ split	3/3/2008	NA	<2.5	<3,9	3,9	<5.3	<6.7	<4.3	<3.9
		08-AS-SE 1L	House upstairs	3/3/2008	NA NA	0.011J	<0.10	1.6	0.11	0.096J	0.51	<0.53
	108 N. L Street	06-AS-SE-1B	House basement	4/8/2008	NA NA	<0.051	<0.16	NA	0.51	0.87	NA	NA
SE-1	100 N. L Street	08-AS-SE-1B	House downstairs	3/3/2008	NA NA	<0.035	<0.11	0,93	0.034J	0.34	0.50	0.027J
		08-SG-SE-1	Subslab in basement	3/3/2008	<10	NA	<10	<25	16	72	26	<10
		08-AS-SE-2L	House upstairs	3/3/2008	NA NA	0.15	<0.12	1.3	0.070	0.58	1.4	<0.63
SE-2	922 E. Callander Street	08-AS-SE-2S (L)	DEQ split	3/3/2008	NA NA	0.21	<0.19	1.1	<0.25	1	2.4	<0.19
SE-2	823 E. Callender Street	08-AS-SE-2B	House basement	3/3/2008	NA.	0.11	<0.11	0.61	0.040	0.14J	0.15	<0.56
		08-SG-SE-2	Subslab	3/3/2008	<10	NA	<10	<25	<5.0	<5.0	<25	<10
		08-AS-SE-3L	House upstairs	2/28/2008	NA NA	<0.040	<0.12	0.87	0.037	0.068J	0.27	0.45J
		08-AS-SE-3B	House basement	2/28/2008	NA.	<0.037	<0.11	1.4	0.081	0.98	2.4	0.22J
SE-3	119 N. I Street	08-AS-SE-3BDEQ	DEQ split	2/28/2008	NA.	<0.064	<0.099	1.5	<0.08	1.3	3.8	0.34
		08-SG-SE-3	Subslab	2/28/2008	<10	NA	<10	<25	<5.0	6.7	<25	<10
		08-SG-SE-3DEQ	DEQ split	2/28/2008	<5.4	NA	<2.0	2,9	<2.7	<3.4	<2.2	<2.0
		08-AS-SE-5	House main floor	3/5/2008	NA NA	0.022J	<0.14	2.9J	0.18J	1,43	6.3J	0.030J
SE-5	110 N. O Street	08-AS-SE-5-S	DEQ split	3/5/2008	NA NA	<0.11	<0.18	1.7	<0.24	2.1	-11	<0.18
		08-SG-SE-5	soilgas (mitigation system)	3/5/2008	<10	NA	<10	<25	<5.0	30	<25	<10
	1	08-AS-SE-8	House	2/27/2008	NA.	<0.037	<0.11	0.74	<0.023	<0.20	<0.12	<0.57
SE-8	1 Harris Place	08-SG-SE-8	Soil gas in crawlspace	2/27/2008	<10	NA	<10	<25	<5.0	36	<25	<10
		08-SG-SE-8DEQ	DEQ split	2/27/2008	<10	NA	<2.0	6,3	7.5	31	1.7 0.70 <25 <4.3 0.51 NA 0.50 26 1.4 2.4 0.15 <25 0.27 2.4 3.8 <25 <2.2 6.3J 11 <25 <0.12	<2.0
		08-AS-SE-9L	House living area	7/14/2008	NA NA	0.024J	<0.10	0.65	0.054	0.15J	0.29	<0.53
SE-9	117 S. N Street	08-AS-SE-9B	House basement	7/14/2008	NA NA	<0.040	<0.12	0.65	0.052	0.77	0.22	<0.63
		08-SG-SE-9	Soil Gas	7/14/2008	<.01	<5.0	<5.0	14	<5.0	42	2.2 110 2.1 1.7 0.70 0.70 0.51 NA 0.50 26 1.4 2.4 0.15 <25 0.27 2.4 3.8 <25 <2.2 6.3J 11 <25 <0.12 <25 3.2 0.29 0.22 8.1 1.4 <25 <0.11 <0.14 <25 <0.11 <0.14 <25 <0.11 <0.14	<5.0
SE-10	124 N. H Street	08-AS-SE-10	House	2/29/2008	NA	<0.035	<0.11	2.7	0.11	0.14J	1.4	0.028J
50-10	124 N. 11 Guect	08-SG-SE-10	Subslab	2/28/2008	<10	NA	<10	<25	<5.0	59	<25	<10
79		08-AS-SE-11L	House upstairs	2/28/2008	NA NA	<0.033	<0.10	0.99	<0.021	<0.18	<0.11	<0.52
SE-11	116 N. H Street	08-AS-SE-11B	House basement	2/28/2008	NA	<0.040	<0.12	0.97	<0.025	<0.21	<0.14	<0.63
	11011110000	08-SG-SE-11	Soil gas in basement	2/28/2008	<10	NA	<10	<25	<5.0	22	<25	<10
		D1-SG-02-28-08	Dup	2/28/2008	<10	NA	<10	<25	5,5	110	2.2 110 2.3 1.7 0.70 0.70 0.70 0.51 NA 0.50 26 1.4 2.4 0.15 <25 0.27 2.4 3.8 <25 <2.2 6.3J 11 <25 <0.12 <25 3.2 0.29 0.22 8.1 1.4 <25 <0.11 <25 <0.11 <0.14 <25 <0.11 <0.14 <25 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.1	<10
-		08-AS-SE-14L	House upstairs	2/27/2008	NA NA	<0.035	<0.11	1.4	2.0	<0.18	1.6	<0.54
SE-14	116 N. L Street	08-AS-SE14L (S)	DEQ split	2/27/2008	NA	<0.064	<0.099	1.1	2.3	1.1	3.1	<0.099
		08-AS-SE-14B	House basement	2/27/2008	NA	<0.032	<0.10	0.55	5.3	0.047J	0.35	<0.50
		08-SG-SE-14	Subslab	2/27/2008	<10	NA	<10	<25	<5.0	10	<25	<10

Attachment 1 TASK I 2008 Indoor Air and Soil Gas Sampling Burlington Northern Livingston Shop Complex Livingston, MT Spring 2008

YARRAN DI	and the state of t	Charles and the same of the same				AV STREET	V	olatile Organio	Compounds (VOCs) (µg/m³)	A CHELLON	
					1,1-Diffuoroethane (LCC) ^(a)	vinyl chloride	cis-1,2- dichloroethene	benzene	trichloroethene	tetrachloroethene	ethylbenzene	trans-1,2- dichloroethene
	Target Indoo	or Air Screening Level (µg/m) (b)		NA .	0.48	35	0.31	0.11	0.81	2.2	70
	Target Soll Gas Screening	Level (µg/m³) with attenuati	on factor = 0.02 (c)		NA NA	24	1750	15,5	5,5	40.5	110	3500
Location ID	Address and notes	Sample ID ^{(d)(e)(f)}	Location Type	Date	A SECTION						THE THE	
SE-20	1401 E. Callender Street	08-AS-SE-20		3/3/2008	NA NA	0.021J	<0.10	0.95	0.034	0.14J	0.25	<0.53
		08-AS-AMB-1-02-25-08	Outdoor air	2/25/2008	NA	<0.039	<0.12	0.73	0.021UJ	2.0	2.3	<0.60
		08-AS-AMB-1-02-26-08	Outdoor air	2/26/2008	NA.	<0.035	<0.11	0.77	0.025U	1.9	2,6	<0.55
	On Hill at Gallatin	08-AS-AMB-1-02-27-08	Outdoor air	2/27/2008	NA	<0.033	<0.10	1.5	0.067	0.93	2.0	0.015UJ
AMB-1		08-AS-AMB-1-02-28-08	Outdoor air	2/28/2008	NA	<0.038	<0.12	1.3	0.067	0.75	1.6	0.020J
WILD !		08-AS-AMB-1-02-29-08	Outdoor air	2/29/2008	NA	<0.039	<0.12	3.1J	0.12J	1.3J	2.8J	0.023UJ
		08-AS-AMB-1-03-03-08	Outdoor air	3/3/2008	NA	<0.031	<0.096	1.9J	0.084J	0.78J	1.7J	<0.48
		08-AS-AMB-1-03-04-08	Outdoor air	3/4/2008	NA	<0.030	<0.094	1.43	0,044U	0.41J	U.88.0	<0.47
		08-AS-AMB-1-03-05-08	Outdoor air	3/5/2008	NA NA	<0.041	<0.13	2,3J	Ue0.0	0,82J	1,6J	<0.64
AMB-1	2nd & W. Gallatin, on hill	08-AS-AMB-1-5-6-08 DEQ	Outdoor air	5/6/2008	NA	<0.15	<0.15	1.7	0.074	0.95	5.9	<0.15
MWID-1	2nd & vv. Gallaun, on hill	08-AS-AMB-1-5-7-08 DEQ	Outdoor air	5/7/2008	NA	<0.049	<0.049	1.6	0.097	0.9	5.9	<0.049
AMB-4	Behind pumphouse at Reservoir and B	08-AS-AMB-4-5-6-08 DEQ	Outdoor air	5/6/2008	NA	<0.10	<0.10	0.86	0.057	0.86	5	<0.10
AMB-4	st	08-AS-AMB-4-5-7-08 DEQ	Outdoor air	5/7/2008	NA	<0.040	<0.040	0.92	0.660	0.73	4.9	<0.040
		08-AS-AMB-5-5-6-08 DEQ	Outdoor air	5/6/2008	NA.	<0.42	<0.042	1,3	0.110	0.64	4.2	<0.042
AMB-5	Behind pumphouse below reservior	08-AS-AMB-5-5-7-08 DEQ	Outdoor air	5/7/2008	NA	<0.043	<0.043	0.89	0.038	1.6	10	< 0.043
	1	2RX-02-28-08	Blank	2/26/2008	NA.	<0.022	<0.067	<0.13	<0.014	<0.11	0.013UJ	0.011UJ
Equipment Blank		2RX-03-03-08	Blank	3/3/2008	NA NA	<0.022	<0.067	0.054UJ	0.013J	0.049J	0.0085UJ	<0.33
		2RX-03-05-08	Blank	3/5/2008	NA NA	<0.022	<0.067	0.061UJ	<0.014	0.0077J	0.014UJ	<0.33

DATA VALIDATION HAS NOT BEEN PERFORMED ON PRELIMINARY ANALYTICAL RESULTS.

Notes:

- (a) Leak check compound used during soil gas sampling only.
- Target Indoor Air Screening levels include Revised Task I Indoor Air Screening Levels for cis-1,2-dichloroethene, tetrachloroethene, trans-1,2-dichloroethene, trichloroethene, (b) and vinyl chloride, and generic indoor air screening levels from Table 2c of EPA's Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater
 - and Soils (Subsurface Vapor Intrusion Guidance) (EPA 2002) for benzene and ethylbenzene. Target Soil Gas Screening Levels are based on Target Indoor Air Screening levels, which include Revised Task I Indoor Air Screening Levels for cis-1,2-dichloroethene, tetrachloroethene,
- (c) trans-1,2-dichloroethene, trichloroethene, and vinyl chloride, and generic indoor air screening levels from Table 2c of EPA's Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance) (EPA 2002).
- Indoor Air Samples were analyzed for volatile organic compounds (VOCs) by EPA Method TO-15 with selective ion monitoring (SIM).
- Soil gas sample (sub-slab) shaded light green, Samples were analyzed by the 8021 mobile laboratory. Results were confirmed using EPA Method TO-15 with selective ion monitoring (SIM). (e)
- DEQ split samples shaded tan. Samples analyzed using EPA Method TO-15 with selective ion monitoring (SIM) for Indoor Air samples. (f)
 - Results highlighted yelow because detection limit is above the appropriate screening level
- (g) "NA" denotes not analyzed.
- "<" denotes analyte was not detected at the indicated method reporting limit. Method reporting limits for each sample vary dependent on sample dilution. (i)
 - "J" indicates that the concentration indicated for this analyte is an estimated value that is below the method reporting limit but greater than the method detection limit. Concentrations that are below the level at which the canister was certified (at the reporting limit) may be false positives.
 - Detected values shown in bold. Addendum No. 2 to Final Task I Supplemental Investigation Work Plan for Indoor Air (DEQ Version), detections above screening levels are shaded blue.
- Sample collected in 2005 Sample collected in 2006
 - Sample collected in 2007
- µg/m³ = micrograms per cubic meter.
 - COC has a completed pathway with Soil Gas results larger than Indoor Air basement (if applicable) which is larger than Indoor Air main floor.
- Yes COC has some incomplete data, however a completed pathway is evident. maybe
- COC has incomplete data to assess a completed pathway. Incomplete
- Indoor Air sample result from main floor is larger that the result from the basement floor.
- COC has completed pathway with Soil Gas results larger than Indoor Air results, however the main floor results are larger than the basement results. Yes, L>B



